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RESEARCH ARTICLE

Taxonomic revision of *Megalothoraca* (Diptera: Richardiidae) with description of a new species, synonyms and new combination

Lisiane Dilli Wendt[1], **Luciane Marinoni**[1]

[1]*Departamento de Zoologia, Universidade Federal do Paraná. Caixa Postal 19020, 81531-980 Curitiba, PR, Brazil.*
Corresponding author: Luciane Marinoni (luciane.marinoni@gmail.com)

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ABSTRACT. A taxonomic revision of *Megalothoracha* Hendel, 1911 is provided, including a description of *Megalothoraca rosalyae* Wendt, **sp. nov.** from Colombia. The genus encompasses large species from Colombia, Ecuador, Peru and Bolivia (new record), and each species was described based either on males or females. These species can be diagnosed by long and slender mid and hind legs and wing longer than body, vein R_{2+3} with two strong curves on apical third, and short spurious vein medially. And males have costal vein conspicuously bowed anteriorly and thickened on medial portion. The following nomenclatural changes are made: *Megalothoraca hendeli* Enderlein, 1912, **syn. nov.** is a junior synonym of *M. pterodontida* Hendel, 1911; *Batrachophthalmum teleopsis* (Hennig, 1938) **comb. nov.** is transferred from *Megalothoraca*, and *Batrachophthalmum quimbaya* Carvalho, Wolff & Wendt, 2011, **syn. nov.** is a junior synonym of *B. teleopsis*. A key to species and illustrations of the female and male terminalia are provided.

KEY WORDS. Identification key, Neotropical, new record, Richardiinae, taxonomy, Tephritoidea.

INTRODUCTION

With about 210 valid species (Steyskal 1968, Wendt and Ale-Rocha 2014a, 2015) classified in 32 genera (Hancock 2010), richardiid flies have been insufficiently sampled in most regions of the world, and many of the included genera need to be revised. The biology of richardiid species has been poorly investigated, but it is known that many are potential pests of some types of fruits (Peñaranda and Ospina 1999, Montilla et al. 2007, 2008, Arellano et al. 2015), while others are saprophagous species associated with animal decomposition (Lopes de Carvalho and Linhares 2001, Moretti et al. 2008, Cavallari et al. 2015).

Megalothoraca Hendel, 1911 includes six large species (8.0–12.4 mm) with long and slender mid and hind legs. The genus has been recorded from Peru, Ecuador (Steyskal 1968), and Colombia (Wendt and Ale-Rocha 2016). Hendel (1911b) first proposed the genus for a species from Peru – *M. pterodontida*, described based on males. Later, Enderlein (1912) described two additional species, also based on males – *M. flava* and *M. hendeli*. In the same paper, the author proposed *Phlebacrocyma*, which he described two new species based on female specimens. Hennig (1938b) described one more species of *Megalothoraca*, an enigmatic fly with long eye stalks – *M. teleopsis*. Three decades later, Steyskal (1968), in his catalogue, synonymized *Phlebacrocyma* with *Megalothoraca*.

Herein, we provide a new diagnosis and redescription of *Megalothoracha* and each of the six previously included species, based on the revision of all types. Additionally, one species from Colombia is described, a new combination and synonymies are proposed, and an identification key and illustrations of the male and female terminalia are provided.

MATERIAL AND METHODS

The external morphological terminology follows Cumming and Wood (2009), and the terminology for the male and female terminalia follows Norrbom and Kim (1988) and White et al. (1999), respectively. Measurements of the head are presented as proportions, which were calculated with the head in anterior view for (1) head width-height: the greatest width of the head, including the eyes, divided by the greatest height of the head, measured from the vertex to the ventral limit of the face; (2) frons-head: the greatest width of the frons divided by the greatest width of the head; (3) frons width-height ratio: the greatest width of the frons divided by the greatest length of the frons, measured from the vertex to the dorsal margin of the lunule; and the head in anterofrontal view for (4) ocelli-distance: distance from the dorsal margin of anterior ocellus to the ventral margin posterior ocelli divided by the distance between the posterior ocelli. Some

length measurements differed a little from the measurements given in the original descriptions, which are presented between parentheses after the measurements.

Label data of types are given exactly as written and presented as follow: individual lines are separated with a backslash (\); individual labels are separated with quotes (“”), square brackets ([]) indicate information not present on the specimen labels.

All type material of *Megalotharaca* was studied during visits to the following collections (abbreviation and curators are between parenthesis): Hungarian Natural History Museum, Budapest, Hungary (HNHM, Z. Soltész), Polish Academy of Science, Museum of the Institute of Zoology, Warsaw, Poland (MZPW, T. Huflejt), Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany (SDEI, Frank Menzel), and Museum für Naturkunde, Leibniz Institute for Evolution and Biodiversity Science, Berlin, Germany (ZMHB, J. Ziegler).

Figures 1, 3, 20, 21, 54 to 56 were taken in 2010 by Dominika Mierzwa (MZPW). Figures 2, 6, 12, 14, 16–18, 59, 61–65 were photographed with a camera Canon Powershot SX50HS. The photographs (Figs 4, 5, 7–11, 13, 15, 19, 22, 57, 58, 60) were taken at MZPW and ZMHB, using local equipment, a stereomicroscope Leica with camera attached and were assembled with software Auto-montage® (MZPW) and Helicon Focus (ZMHB).

The holotype of the new species described here, and one non-type specimen of *M. pterodontida* Hendel were borrowed from Colección Entomológica, Universidad de Antioquia, Medellín, Colombia (CEUA, Marta Wolff) and from ZMHB, respectively. This material was studied with a stereoscopic microscope Nikon SMZ800 with camera lucida attached (for confection of drawings). Images of the relevant external structures (Figs 30–40, 48) and measurements of the holotype were obtained through a stereoscopic microscope Leica® M205C, equipped with a digital camera and the software Auto-Montage®. In order to study and to illustrate the male and female terminalia the abdomens were detached and treated according to the protocol of Cumming (1992) and stored in plastic microvials containing glycerine. The photographs of sternites and terminalia of holotypes (Figs 42–47, 49–53) were taken with digital camera (Moticam 2300) attached to a compound microscope with the aid of the software Motic Images Plus 3.0ML (Motic BA210). The wing of the new species was also detached and mounted in Entelan between cover slips, and then glued to a cardboard. Both the vial and the cardboard were attached to the pin of the respective specimen.

TAXONOMY

Megalothoraca Hendel, 1911

Megalothoraca Hendel, 1911a: 395 (type species: *Megalothoraca pterodontida* Hendel, 1911, by monotypy); Hendel 1911a: 182 (key); 1911b: 5, 50–52 (key, redescription, note, distribution, spp. list); Hennig 1938a: 121 (citation); 1838b: 9 (citation); Aczél 1950: 43 (catalogue); Steyskal 1968: 5 (catalogue); Hancock 2010: 877 (key); Carvalho et al. 2011: 43 (key); Alencar et al. 2013: 202 (citation); Wendt and Ale-Rocha 2014b: 306, 308 (citation, discussion); 2016: 592 (catalogue of Colombia, note).

Phlebacrocyma Enderlein, 1912: 105 (type species: *Phlebacrocyma undulosum* Enderlein, 1912, original designation); Hennig 1938a: 121 (citation); Aczél 1950: 44 (catalogue); Steyskal 1968: 5 (catalogue; synonymy).

Diagnosis and comments. *Megalothoraca* species are large (8.0–12.4 mm), with thorax well developed and wing generally longer than body, mid and hind legs long and slender, fore leg generally conspicuously more robust than the others (at least in males), and abdomen oval. Males and females of the included species are unique in lacking spine-like seta on the posteroventral surface of the mid and hind femora; mid femur with only one anteroventral spine-like seta and hind femur with one or two such setae (e.g. Fig. 40); vein R_{2+3} with two conspicuous curves on apical third (Figs 16, 48, 57), and medial spurious vein short (Fig. 48) (absent in *M. flava* Enderlein, 1912). Additionally, *Megalothoraca* males have costal vein conspicuously bowed anteriorly and thickened on medial portion (unmodified in females) (Figs 5, 18, 22), thorax distinctly well developed, setae on the fore and mid coxae stout (Fig. 7) and hind coxa setulose on posterior surface (males of other Richardiinae genera have unmodified costal vein, thorax proportional to the rest of body, unmodified setae on the coxae and hind coxa bare posteriorly – also setulose in *Setellia* Robineau-Desvoidy, 1830).

The following features of *Megalothoraca* are shared with *Euolena egregia* (Gerstaecker, 1860) and species of *Bathachophtalmum* Hendel, 1911: antero- and posteroventral spine-like setae on fore femur distinctly more numerous and robust than on mid and hind femora; palpus straight. Moreover, species of *Megalothoraca* are similar to species of *Batrachophthalmum*, *Euolena* Loew, 1873 (in part) and *Hemixantha* Loew, 1873 (in part) in the male terminalia with medial surstylus bilobed at apex, and prensiseta long and inserted preapically on inner margin. Species of *Megalothoraca* can be easily differentiated by the venation of their wing, thorax well developed, number and thickness of the spine-like setae on mid and hind femora and the presence of setulae on hind coxa, as described above.

The general morphology of *Megalothoraca* species is quite regular, and the chaetotaxy of the head and especially the thorax is very similar among species. The main characteristics used to distinguish them are the coloration of the body and the wing spots. Since all species were described based on either male or female specimens and no species is known from both sexes, it is not possible to ascertain whether there is sexual dimorphism. *Megalothoraca undulosa* (Enderlein, 1912), *M. ferruginea* (Enderlein, 1912), and *M. rosalyae* sp. nov., (known only from females) lack a lobe on the costal vein; have narrower medial band on the wing, lack anterior spine-like setae on the fore and mid coxae, and their thorax is not as well developed as the thorax of males (*M. pterodontida* Hendel, 1911 and *M. flava*).

Included species. *Megalothoraca ferruginea*, *M. flava*, *M. pterodontida*, *M. rosalyae* sp. nov., *M. undulosa*.

Redescription. Large species, length 8.2–12.4 mm, commonly with wing longer than body (except in *M. ferruginea*).

Robust body, with general colour yellow (Fig. 5) or reddish brown (Fig. 1) to dark brown (Figs 15, 31, 55), generally non-metallic (except abdomen of *M. rosalyae* sp. nov., Fig. 30). **Head.** In dorsal view, slightly narrower than thorax; in frontal view, wider than high. Eye oval, higher than wide. Vertex, in frontal view, straight (Figs 10, 58) or slightly concave (in *M. rosalyae* sp. nov., Fig. 32). Frons not protruded anteriorly (Figs 9, 19, 34). Ocellar triangle slightly elongate, anterior ocellus inserted on dorsal third or fourth of frons; bright, non-pollinose; convex, contoured by a weak (or stronger in *M. rosalyae* sp. nov., Figs 32, 33) cavity. Lunule developed. Antennal bases narrowly separated by less than width of scape; scape slightly elongate, almost as long as pedicel. First flagellomere short, at most 2.5 times longer than high. Arista long pubescent. Clypeus well developed. Palpus elongate and linear, base, mid region and apex similar in width (Figs 9, 19). Postcranium, in lateral view, distinctly more developed on ventral two-thirds (Figs 9, 19, 34). Chaetotaxy: setae long and robust; ocellar seta present or absent, orbital and genal setae present, postocellar and postgenal setae absent, outer vertical seta distinctly longer and thicker than inner vertical seta, with alveolus robust and elevated (e.g. Figs 10, 32, 33). **Thorax.** Especially in males, thorax distinctly well developed and robust (Figs 5, 15). Scutum elongated, gradually widened posteriorly (Figs 3, 13, 37, 54), with two longitudinal and parallel excavated rows, distinctly visible (e.g. Figs 37, 38); setulae sparsely and randomly distributed; weakly pollinose. Scutellum bare. Subscutellum developed. Prosternum, proepimeron, metasternum, and metapleuron bare. Katatergite not setulose, sparsely pollinose. Metathoracic spiracle conspicuously setulose at posterior margin. Postmetacoxal bridge completely sclerotized. Chaetotaxy: very reduced in number, scapular seta, postpronotal seta (except in *M. rosalyae* sp. nov.), presutural supra-alar, postsutural surpa-alar, intra-alar, proepimeral and katepisternal setae absent; postalar seta present, robust; one dorsocentral and one scutellar setae stout; posterior notopleural seta distinctly stouter and longer than anterior notopleural seta; postalar seta developed, robust. **Legs.** Elongate. Males with fore (Fig. 7) and mid coxae with one robust anterior apical spine- like seta; females without these spines, only with long setae. Fore femur distinctly (in males, e.g. Figs 5, 15) or slightly (in female, e.g. Figs 39, 40) thicker than mid and hind femora (except in *M. ferruginea*, similar in thickness), with stout antero- and posteroventral spine- like setae (generally number in left and right femora varies in the same specimen), and more numerous than on mid and hind femora (e.g. Figs 15, 21, 39, 40). Mid and hind legs slender and long (Figs 1, 5, 15, 31). Mid and hind femora sparsely setulose, without posteroventral spine-like seta, mid femur with only one anteroventral spine-like seta (e.g. Fig. 1), and hind femur with one (e.g. Figs 1, 15) or two spine-like setae (e.g. Fig. 40). Hind coxa setulose on posterior surface in males, bare in females. Hind femur without anterodorsal preapical seta. **Wing** (Figs 16, 18, 22, 48, 57). Long, generally longer than body length, 8.0–13.8 mm. Pattern conspicuous, including basal, medial and apical marks (Fig. 22, each mark indicated). Males with costal vein conspicuously bowed anteriorly and thickened at their medial portion in males, unmodified in females. (Figs 18, 48). Veins bare. Vein R_{2+3} with two conspicuous or inconspicuous (in *M. rosalyae* sp. nov., Fig. 48) curves in apical third; with short postmedial spurious vein (absent in *M. flava*). Veins R_{4+5} and M converging apically. Vein r-m at distal third to fifth of cell dm. Vein A_1+CuA_2 long, becoming weaker towards margin. Alula and anal lobe well developed. **Abdomen.** Dark brown (e.g. Figs 20, 54), sometimes with blue sheen (Fig. 30); metallic or non-metallic; smooth, non-punctate, and sparsely pollinose or shining. Shape oval (Fig. 41), syntergite 1+2 with base about one third as wide as apex, and with one or two pairs of preapical laterodorsal setae. **Female sternites and terminalia** (only female of *M. rosalyae* sp. nov. was dissected and examined, Figs 42–47, 49–53). Sternite 1 present, setulose (Fig. 42). Sternites 3–5 with short basal apodemes (Figs 44–46). Sternite 6 with basal round hole (Fig. 47). Oviscape short, almost as wide as long (Fig. 53). Eversible membrane poorly sclerotized, with distal half covered with oblique rows of multidentate scales. Tergite and sternite 8 with pair of rows of moderately long setulae in distal two-thirds. Tip of cerci rounded (Figs 49, 50). Two subglobose spermathecae strongly sclerotized. **Male sternites and terminalia** (only male of *M. pterodontida* was dissected and observed, Figs 23–29). Sternite 1 present and setulose (Fig. 23). Sternites without basal apodemes (Figs 23–27). Spiracles 6 and 7 present. Epandrium densely setulose, globose (Fig. 28), in lateral view, higher than wide (Fig. 29). Cerci, in lateral view, developed, and globose, densely setulose (Fig. 29). Medial and lateral surstyli similar in length. Lateral surstylus without preapical projection. Medial surstylus with a submedial anterior rounded projection; bilobate apically; with long and acuminate preapical prensiseta.

Distribution. Colombia, Ecuador, Peru, Bolivia (new record).

Identification key to the species of *Megalothoraca* Hendel

1 Thorax and legs entirely yellow (Figs 5, 9). Vein R_{2+3} without spurious vein. [Ecuador].... *M. flava* Enderlein, 1912 [♂]

1′ Thorax and at least some parts of legs reddish brown, or pale brown to dark brown (Figs 1, 13–15, 21, 31, 55). Vein R_{2+3} with short spurious vein (Figs 22, 48, 57; spurious veins indicated by arrows) 2

2 Head and thorax entirely reddish brown (Figs 1, 3). Fore and mid coxae and femora pale brown (Fig. 1). [Ecuador] ..... *M. ferruginea* (Enderlein, 1912) [♀]

2′ Head and thorax entirely dark brown (Figs 13, 15, 19, 20, 55), except in *M. rosalyae* sp. nov. with part of frons reddish brown (Figs 32–36). Fore and mid coxae and femora brown to dark brown. 3

3 Tarsi yellowish white, contrasting with dark brown leg (Figs 55, 56). Female with sternite 6 and oviscape yellow, and rest of abdomen dark brown, almost black (Figs 56, 60). [Ecuador] ..... *M. undulosa* (Enderlein, 1912) [♀]

3′ Tarsi not contrasting with remaining other portions of leg, brownish (Fig. 31), or if yellow to brownish yellow, tibi-

ae and part of femora also brownish yellow (Figs 14, 15). Female with sternite 6 and oviscape dark brown, almost black (Fig. 53) (female of *M. pterodontida* unknown)..... 4

4 Ocellar seta absent (Fig. 33) and postpronotal seta present. Postpronotal lobe paler than scutum (Figs 37, 38). Abdomen metallic dark blue (Fig. 30). [Colombia] .... *M. rosalyae* Wendt, sp. nov.

4' Ocellar seta present and postpronotal seta absent. Postpronotal lobe concolorous with scutum (Fig. 15). Abdomen dark brown (Figs 13, 15). [Ecuador, Peru, Bolivia]..... ..... *M. pterodontida* Hendel, 1911 [♂]

Megalothoraca ferruginea (Enderlein, 1912)

Figs 1–4

Phlebacrocyma ferruginea Enderlein, 1912: 106. Type locality: Santa Inez, Ecuador. Hennig 1938a: 121 (discussion); Aczél 1950: 44 (catalogue).

Megalothoraca ferruginea Steyskal, 1968: 5 (catalogue).

Diagnosis and comments. *Megalothoraca ferruginea*, known from a female specimen, is the only species within genus with head and thorax entirely reddish brown, fore and mid coxae, fore and mid femora pale brown (Figs 1, 3) (black in *M. undulosa* and most other species, except yellow in *M. flava*).

Redescription. Holotype female, MZPW: Measurements (in mm): body length 8.20 (8.50 according to Enderlein 1912: 106); wing length 8.00 (8.25 according to Enderlein 1912: 106). **Head** (Figs 1, 3). Extremely damaged, especially oral region and eyes, ratios not measured, and some parts not observed. Anterior ocellus inserted on posterior third of frons. Reddish brown, except ocellar triangle and vertex brown. Vertex in frontal view straight, not concave. Frons and postcranium sparsely whitish and brownish pollinose, respectively. Antenna brownish. Clypeus, palpus, gena and prementum missing. Ocellar seta slightly longer than orbital seta; inserted at same level. **Thorax** (Figs 1, 3). Entirely reddish brown, with scutellum, subscutellum and mediotergite slightly darker. Scutum 1.33 times longer than wide. Postpronotal seta absent. **Legs** (Fig. 1). Fore coxa, trochanter, and femur yellowish orange; mid and hind coxae, trochanters, and femora reddish brown; all tibiae brown; all tarsomeres yellowish. Fore and mid coxae without anterior spine. Femora similar in thickness. Left fore femur with two anteroventral and three posteroventral spine-like setae, and right fore femur with two antero- and posteroventral spine-like setae; setae different in size, occupying apical half of femur. Fore and mid coxae without spine-like seta. Mid and hind femora with one stout preapical anteroventral spine-like seta; stouter than those on fore femur. Hind coxa bare on posterior surface. **Wing** (Fig. 1). Generally hyaline except for the following marks: cell bc yellowish; faint and diffuse brownish basal band from vein R_1 at level of costal break, passing on base of bifurcation between R_{2+3} and R_{4+5}, and on vein bm-cu; oblique yellow area in cell r_1, from costal break reaching medial band; incomplete and narrow medial brown band, from costal margin to vein CuA_1, passing on spurious vein and on vein r-m, with irregular margins; and wider and conspicuous apical brown spot, faint in cell m, with proximal margin irregular, almost straight. Vein R_{2+3} from apical third equally twice sinuous. Spurious vein faint and short, at same level of vein r-m. Vein M, distal to vein r-m, sinuous and curved towards R_{4+5}. Vein r-m at distal third of cell dm length. Halter with stem brownish and knob brown. **Abdomen** (Figs 1, 3). Entirely dark brown, except contrasting tergite 5 yellowish orange. Tergites brown setulose, very sparsely whitish pollinose. Syntergite 1+2 with two pairs of weak preapical laterodorsal setae. Sternites 1–4 brownish, sternite 5 yellowish orange. **Female terminalia** (Fig. 4). Not dissected. Oviscape reddish yellow. Tip of cerci rounded.

Male. Unknown.

Type-material examined. Holotype female, MZPW: "Santa Inéz\(Ecuad. [Ecuador])\R.Haensch S."; "Type" [red label]; "Phlebacrocyma\ferrugineum\Type Enderl. ♀ [handwritten]\ Dr. Enderlein det. 1912" (Fig. 2). The holotype is pinned, in poor condition (Figs 1, 3): head damaged, with eyes, oral and genal regions, and postcranium ventrally missing, right anterior region of anepisternum and katepisternum with a hole; oviscape, apex of segment 8, and cerci exposed (Fig. 4).

Distribution. Ecuador.

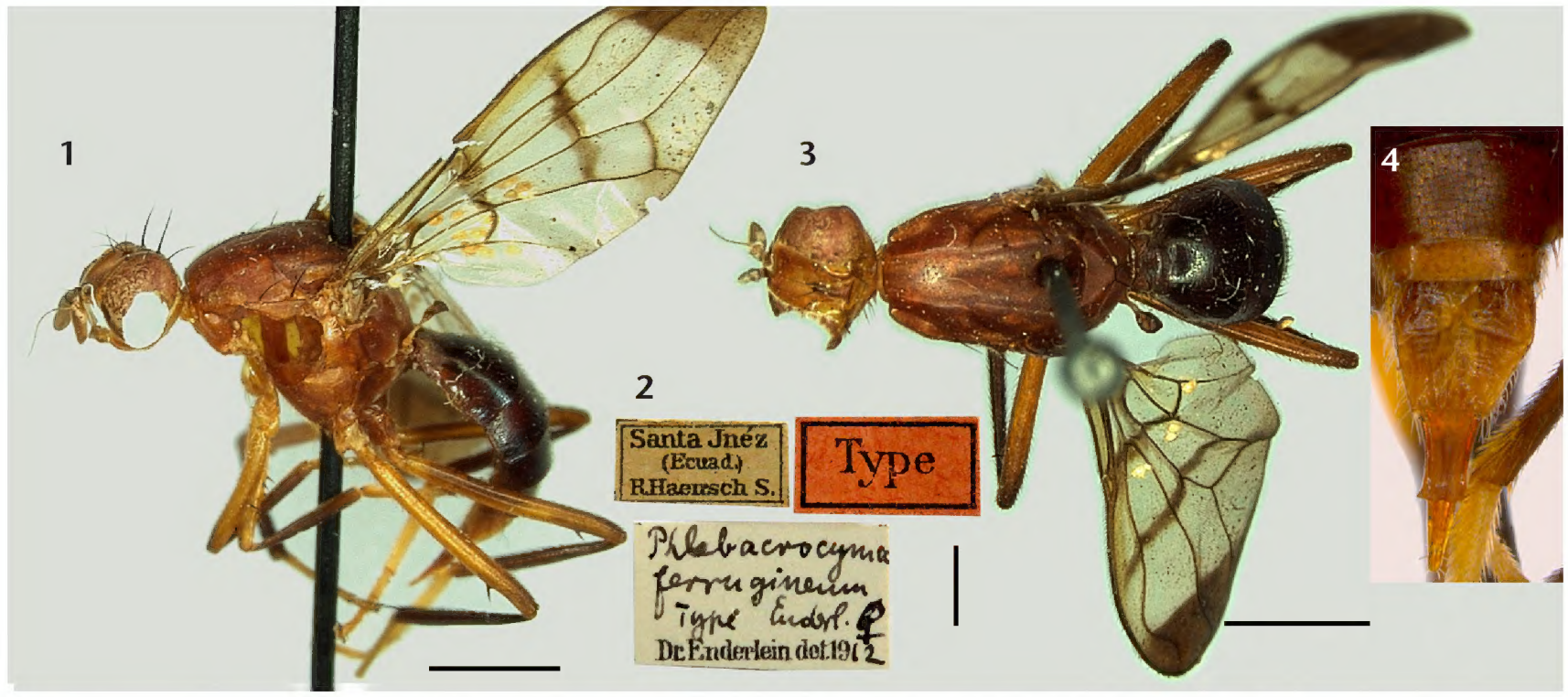
Megalothoraca flava Enderlein, 1912

Figs 5–11

Megalothoraca flava Enderlein, 1912: 104. Holotype male (MZPW). Type locality: Santa Inez, Ecuador. Hennig 1938a: 121 (citation); Steyskal 1968: 5 (catalogue).

Diagnosis and comments. *Megalothoraca flava*, known only from a male, is distinct by having thorax and legs entirely yellow (Fig. 5) (other species are brownish, brown or black), spurious vein in R_{2+3} absent, and apical brown spot not completely homogenous, with faint hyaline areas on cells r_{2+3} and r_{4+5}.

Redescription. Holotype male, MZPW: Measurements (in mm): body length 12.4 (11.75 according to Enderlein 1912: 105); wing length 13.8 (13.5 according to Enderlein 1912: 105). **Head** (Figs 9–11). Head width-to-height ratio 1.36. Frons-to-head ratio 0.33. Frons width-to-height ratio 0.72. Ocelli-distance ratio 2.14; anterior ocellus inserted at dorsal third of frons (Figs 10, 11). Brown, except prementum, palpus, and posterior half of postcranium yellow (Fig. 9). Vertex, in frontal view, straight. Frons sparsely whitish pollinose. Parafacial, gena and ventral two-thirds of postcranium, especially at contour eye and extending to occipital foramen, densely whitish pollinose. Vertex and dorsal third of postcranium bright. Postcranium sparsely brown setulose. Orbital and outer vertical areas, extended to vertex, slightly tumescent and bright (Fig. 11). Ocellar seta present, longer than orbital seta, and inserted at same level. **Thorax** (Figs 5, 9). Entirely yellow. Scutum 1.54 times longer than wide. Postpronotal seta absent. **Legs** (Figs 5, 7–9). Entirely yellow. Fore (Figs 7, 8) and mid coxae with strong anterior spine-like



Figures 1–4. *Megalothoraca ferruginea*, holotype female, MZPW: (1) habitus lateral; (2) labels; (3) habitus dorsal; (4) oviscape, part of segment 8, and cerci. Photographs 1 and 3 were provided by Dominika Mierzwa, MZPW. Scale bars: 1, 3, 4 = 0.2 mm, 2 = 0.5 mm.

seta. Fore femur thicker than mid and hind femora. Left fore femur with five anteroventral and three posteroventral spine-like setae, and right fore femur with six anteroventral and three posteroventral spine-like setae; setae different in size, occupying apical two-thirds of anteroventral surface and apical third of posteroventral surface of femur. Mid and hind femora with one preapical anteroventral spine-like seta, thinner than those on fore femur. Hind coxa setulose on posterior surface. **Wing.** Generally hyaline except for the following marks: conspicuous brown basal band from vein R_1, from base of bifurcation between R_{2+3} and R_{4+5} to vein bm-cu, distinctly wider in cell r_1; wide medial brown band, from costal vein to vein M, wider at distal margin in cell r_1, but not reach apical spot, and more diffuse in cell dm, with proximal and distal margins irregular; apical brown spot, as wide as medial band, with diffuses hyalines areas in cells r_{2+3} and r_{4+5}, very faint in cell m, with proximal margin irregular. Vein R_{2+3} from apical third equally twice conspicuous and shortly sinuous. Spurious vein absent. Vein M, distal to vein r-m, sinuous and curved towards R_{4+5}. Vein r-m at distal fifth of cell dm. Halter pale brown. Abdomen. Brown with metallic reflexes, except basal half of syntergite 1+2 and tergite 5 reddish brown. Tergites sparsely and shortly brownish setulose, non pollinose. Syntergite 1+2 with one pair of robust and one pair of weak preapical laterodorsal setae. Sternites brown. **Male terminalia.** Not dissected. Epandrium and cerci brownish yellow.

Female. Unknown.

Type-material examined. Holotype male, MZPW: "Santa Inéz\(Ecuad. [Ecuador])\R.Haensch S."; "Type" [red label]; "Megalothoraca\flava\Type Enderl. ♂ [handwritten]\Dr. Enderlein det. 1912" (Fig. 6). The holotype is pinned and relatively well preserved, with no part missing; scutum, scutellum, and median region of costal vein of left wing damaged (Fig. 5).

Distribution. Ecuador.

Megalothoraca pterodontida Hendel, 1911

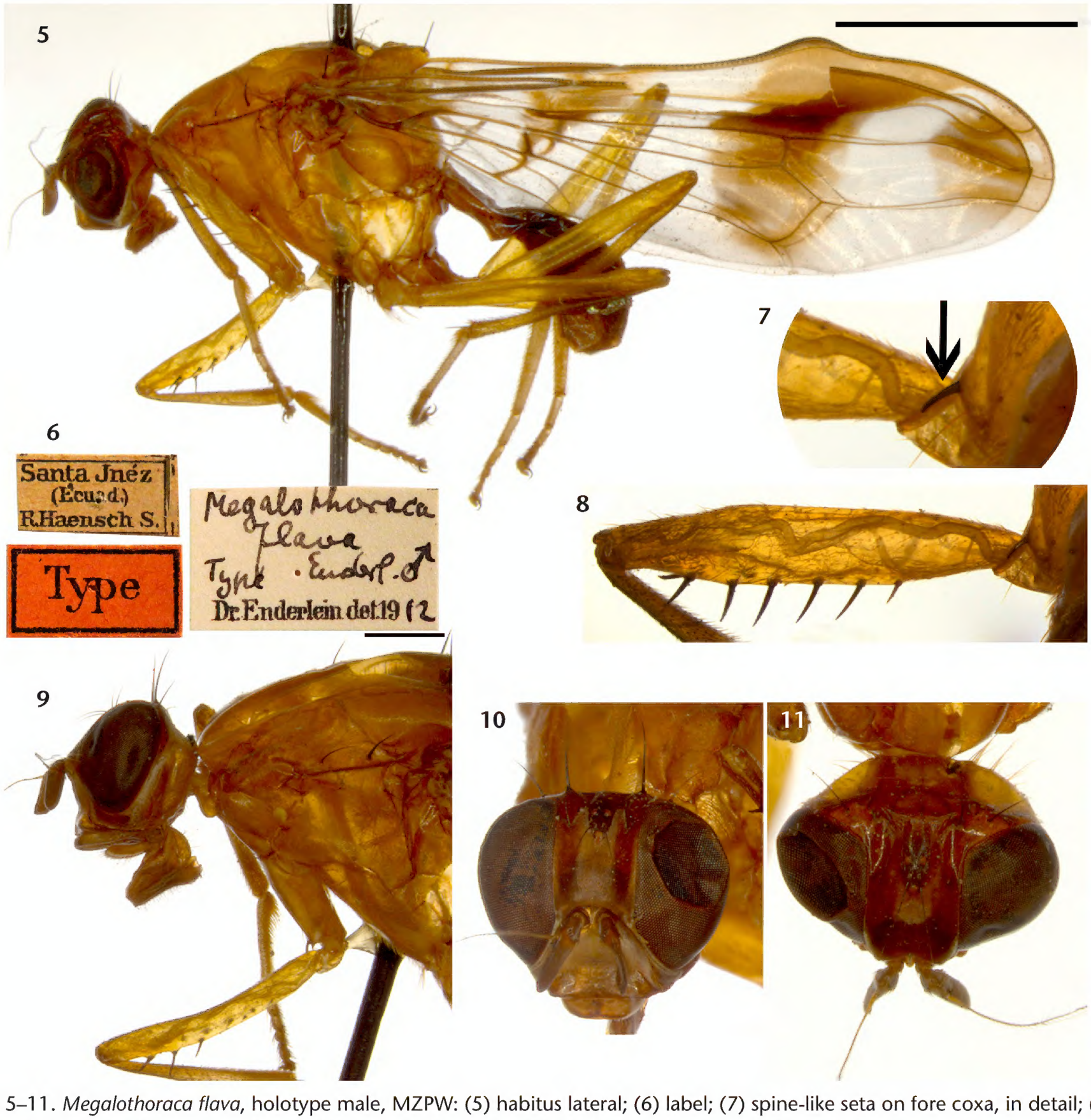
Figs 12–19, 23–29

Megalothoraca pterodontida Hendel, 1911a: 395. Type locality: Peru, Cagon (1000m). Hendel 1911b: 52 (distribution, plate 3, figs 74, 75: habitus, head); Hennig 1938b: 9 (discussion); Aczél 1950: 43 (catalogue); Steyskal 1968: 5 (catalogue).

Megalothoraca hendeli Enderlein, 1912: 104. Type locality: Ecuador, Santa Jnéz. Hennig 1938a: 121 (material list); Steyskal 1968: 5 (catalogue from Neotropical and United States). **New synonymy**.

Diagnosis and comments. *Megalothoraca pterodontida*, known from male specimens, is recognized by body mostly dark brown (Figs 13–15); medial band of wing wide, complete from costal to posterior margins, and with a rounded hyaline area anterior to vein M in cell dm, band continuous in cell r_1 reaching apical spot (Figs 13, 16). Here, *M. hendeli* is recognized as a junior synonym of *M. pterodontida* since there are no significant differences between the three syntype of *M. hendeli* (Figs 20–22) from Ecuador and the holotype of *M. pterodontida* (Figs 12, 14, 16) from Peru.

Redescription. Holotype male (Figs 12, 14, 16, 18), HNHM: Measurements (in mm): body length 11.5 (12.0 according to Hendel 1911a: 396); abdomen length 4.1 (4.0 according to Hendel 1911a: 396); wing length 13.3 (13.0 according to Hendel 1911a: 396). **Head** (Fig. 14). Head width-to-height ratio 1.31. Frons-to-head ratio 0.39. Frons width-to-height ratio 0.98. Ocelli-distance ratio 2.8; anterior ocellus inserted at dorsal third of frons. Dark brown, with ocellar triangle and vertex almost black; clypeus and prementum dark brown, palpus brown. Vertex, in frontal view, straight. Frons and face sparsely brownish pollinose. Parafacial, gena, and ventral two-thirds of postcranium, especially at contour eye and extending to occipital foramen, densely whitish pollinose. Vertex and dorsal third of postcranium bright. Postcranium sparsely black setulose. Scape and

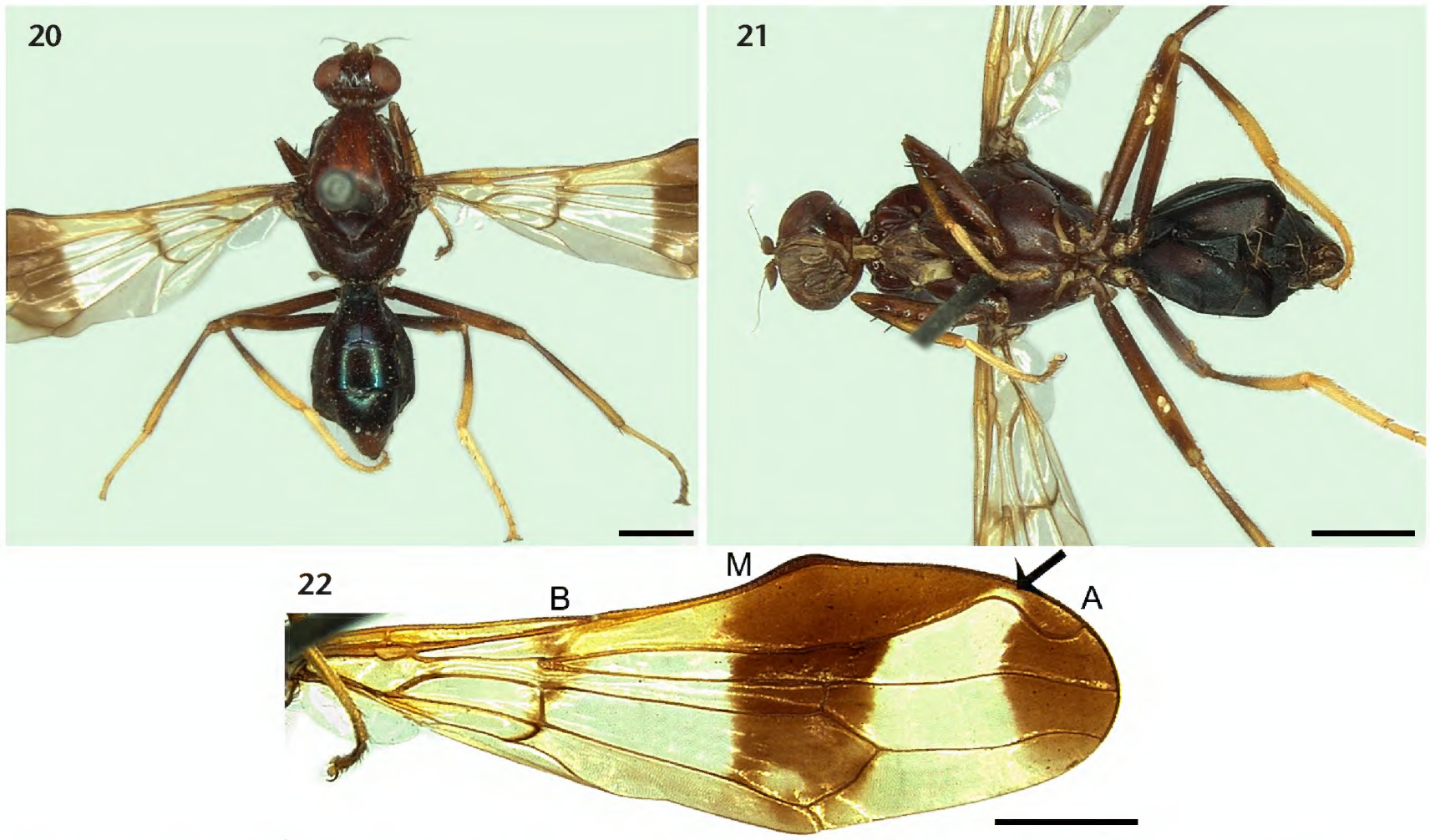


Figures 5–11. *Megalothoraca flava*, holotype male, MZPW: (5) habitus lateral; (6) label; (7) spine-like seta on fore coxa, in detail; (8) fore femur, anterior view; (9) head and thorax, lateral; (10) head, frontal; (11) head, dorsal. Scale bars = 0.5 mm.

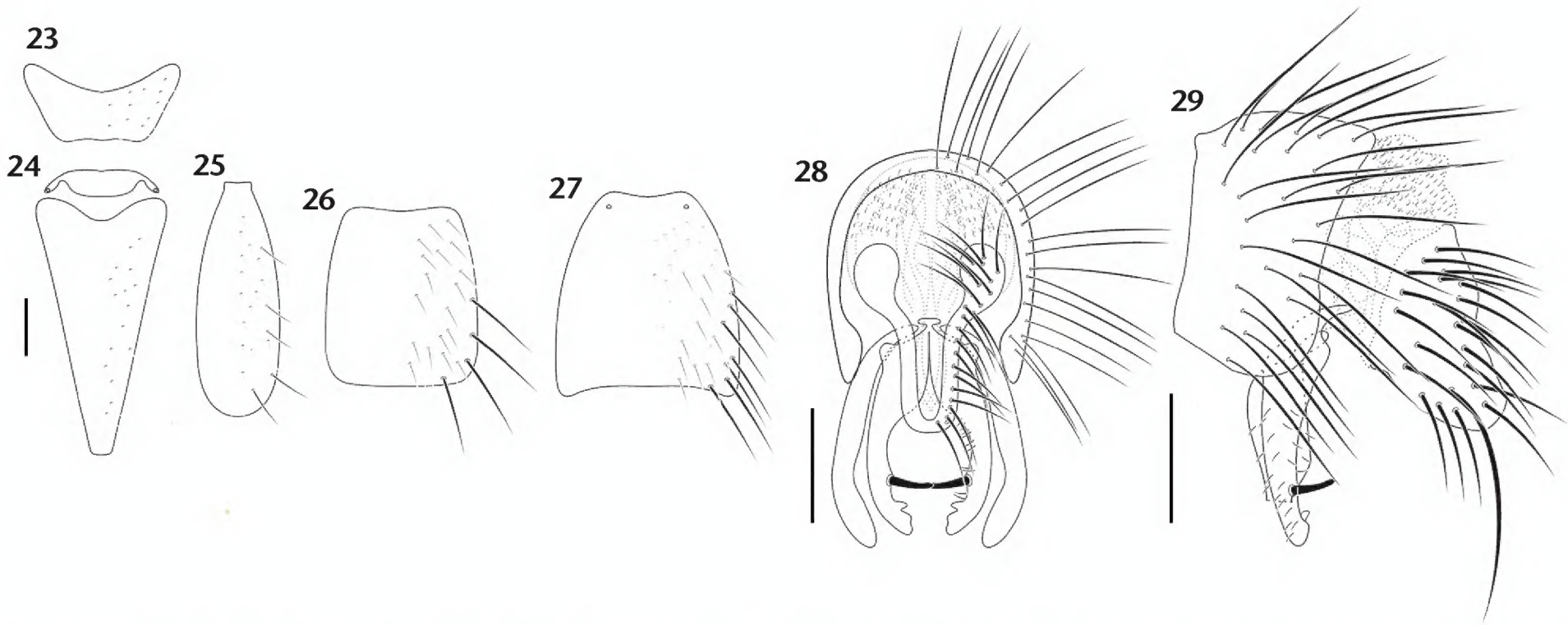
pedicel dark brown, flagellomere and arista slightly paler. Orbital and outer vertical areas, extended to vertex, slightly tumescent and bright. Ocellar seta present, longer than orbital seta, and inserted at same level. **Thorax** (Fig. 14). Entirely reddish dark brown, with postpronotal lobe and notopleuron densely whitish pollinose. Scutum 1.41 times longer than wide. Postpronotal seta absent. **Legs** (Fig. 14). All coxae, trochanters, and fore femur reddish dark brown; all tarsomeres yellow; fore tibia, mid and hind femora at basal fourth and apical fifth, mid and hind tibiae at basal third brownish, remainder of mid and hind femora and of tibiae yellowish orange. Fore and mid coxae with strong anterior spine-like seta. Fore femur distinctly thicker than mid and hind femora. Left fore femur missing, right fore femur with seven anteroventral and four posteroventral spine-like setae; setae distinctly different in size, occupying apical three-fourths of anteroventral surface, and apical two-thirds of posteroventral surface of femur. Mid and hind femora with one preapical spine-like seta, thinner than those on fore femur. Hind coxa setulose on posterior surface. **Wing** (Figs 16, 18). Generally hyaline except for the following marks: cell bc yellow and cell c slightly yellowish; faint and diffuse brownish basal band from vein R_1, from base of bifurcation between R_{2+3} and R_{4+5} to vein bm-cu; yellow area in cell r_1 from costal break to proximal margin of medial spot; complete wide brown medial band, from costal vein to

Figures 12–19. *Megalothoraca pterodontida*: (12, 14, 16–18) Holotype male, HNHM; (13, 15, 19) Non-type male, ZMHB. (12) Photo of box with holotype (left) and non-type material (right) male from HNHM; (13) habitus dorsal; (14, 15) habitus lateral; (16) wing; (17) labels; (18) wing, costal vein in detail; (19) head, lateral. Scale bars: 14–17 = 2.0 mm, 19 = 1.0 mm.

posterior margin and continuous in cell r_1, reaching apical spot, with a rounded hyaline area anterior to vein M in cell dm, with proximal and distal margins irregular; and apical brown spot, as wide as medial band, very faint in cell m, with proximal margin rounded. Vein R_{2+3} from apical third equally twice conspicuous and shortly sinuous. Spurious vein faint, slightly distal to vein r-m. Vein M, distal to vein r-m, sinuous and curved towards R_{4+5}. Vein r-m at distal fifth of cell dm. Halter pale brown. **Abdomen.** Tergites brown (Fig. 14), sparsely and shortly brown setulose, sparsely whitish pollinose, denser at basal half of syntergite 1+2. Syntergite 1+2 with one pair of strong preapical laterodorsal setae. Sternites dark brown. Holotype not dissected, sternites visualized from one non-type specimen from Peru (ZMHB) (Figs 23–27): sternites without basal apodeme. Sternite 1 (Fig. 23) relatively well developed, one-third of sternite 2 length, convex at apex and almost straight at apex, densely short setulose, setulae similar in length. Sternite 2 (Fig. 24) divided into two plates, twice longer than wide, densely short setulose, setulae similar in length. Sternite 3 (Fig. 25) sub rectangular, with base straight and narrower, twice longer than wide, setulae different in size. Sternites 4 (Fig. 26) sub quadrate, as long as wide, with long and short setulae. Sternite 5 (Fig. 27) sub rectangular, slightly wider than long, with short setulae medially, and long setulae at margin. **Male terminalia.** Holotype not dissected, one non-type specimen from Peru (ZMHB) dissected (Figs 28, 29). Epandrium and cerci brown. Spiracles 6 and 7 presents, similarly developed. Epandrium long setulose. Cerci, in lateral view, developed, and globose, densely setulose. Medial and lateral surstyli similar



Figures 20–22. *Megalothoraca hendeli*, syntype male, MZPW, new synonymy of *M. pterodontida*: (20) habitus dorsal; (21) habitus ventral; (22) wing. Photographs 20 and 21 were provided by Dominika Mierzwa, MZPW. Abbreviations: A. Apical spot; B. Basal band; M. Medial band. Scale bars = 2.0 mm.



Figures 23–29. *Megalothoraca pterodontida*, non type male, ZMHB, drawing lines: (23–27) sternites, ventral: (23) sternite 1; (24) sternite 2; (25) sternite 3; (26) sternite 4; (27) sternite 5; (28, 29) epandrium, medial and lateral surstyli, and cerci; (28) posterior view; (29) lateral view. Scale bars = 0.2 mm.

in length. Lateral surstylus lateral flattened laterally, without preapical projection. Medial surstylus distinctly wider at basal half; bilobate apically, preapical lobe smaller than apical lobe. Distiphalus with ribbons weakly setulose, apex without set of setae, and with plate poorly sclerotized.

Female. Unknown.

Type-material examined. *Megalothoraca pterodontida* Hendel, holotype male, HNHM: "Cagon\Peru (1000 m.)"; "Megalothoraca\pterodontida\typus" [handwritten]; "TYPUS" [red label] (Fig. 17) (HNHM). Specimen pinned, and in excellent

condition, with no part missing, except by the left fore leg from femur; just a little dust attached at body; wing well stretched (Figs 12 (left side), 14). *Megalothoraca hendeli* Enderlein, syntypes male, MZPW: "Santa Inéz\(Ecuad. [Ecuador])\R. Haensch S."; "Type" [red label]; "Megalothoraca\hendeli\Type Enderl. ♂ [handwritten]\Dr. Enderlein det. 1912" (1 male). Specimen well preserved, with no damage, with outstretched wings (Figs 20–22). **Comments:** In the original description, Enderlein (1912) did not designate any specimen as the holotype, nevertheless this specimen has a red label attached to it, where "Type" is written, and the other two specimens have yellow labels written "co-type". Revision of this species have never been provided before, then all specimens must be considered syntypes. "Santa Inéz\(Ecuad. [Ecuador])\R. Haensch S S."; "Co = Typus" [yellow label]; "Megalothoraca\hendeli\Type Enderl. ♂ [handwritten]\ Dr. Enderlein det. 1912" (2 males). Both specimens are well preserved, with no damage.

Aditional material. Peru. Cagón, 1000 m [without date and collector], det. Kertész (1 male, HNHM); Department Cuzco, Callanga river, i. Thale des Piñipini [valley], 1900, 1500m, Garlepp col., det. Enderlein (2 males, ZMHB); Bolivia. [La Paz] Mapiri [without date and collector], det. Enderlein, 1919[?] (1 male, ZMHB).

Variation. **Legs.** The specimen from Bolivia has the fore coxa with anterior seta stout, but not as spine-like seta. The number of antero- and posteroventral spine-like on fore femur can moderately vary in greater or lesser number than on the holotype. **Wing.** Non-type material from Bolivia (Fig. 13) and syntypes of *M. hendeli* (Fig. 22, indicated with black arrow) have the extension between medial band and apical spot, in cell r_1, with a hyaline area anterior to first sinuosity of vein R_{2+3}. Besides, the material from Bolivia has the medial band in cell dm incomplete, not reaching the vein dm-cu, and hyaline area of cell dm, anteriorly to vein M, opened (Fig. 13, indicated with black arrow). **Abdomen.** Paler (e.g. non-type from Peru, ZMBH) or darker (e.g. syntypes of *M. hendeli*) than holotype, with tergites reddish brown to dark brown.

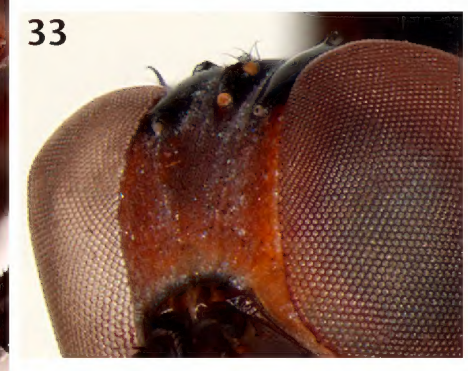
Distribution. Ecuador, Peru, and Bolivia (new record).

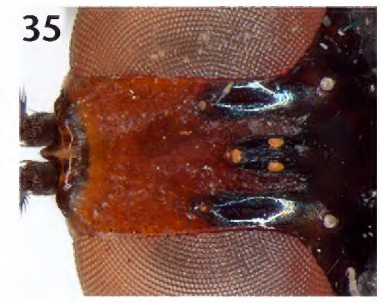
Megalothoraca rosalyae Wendt, sp. nov.

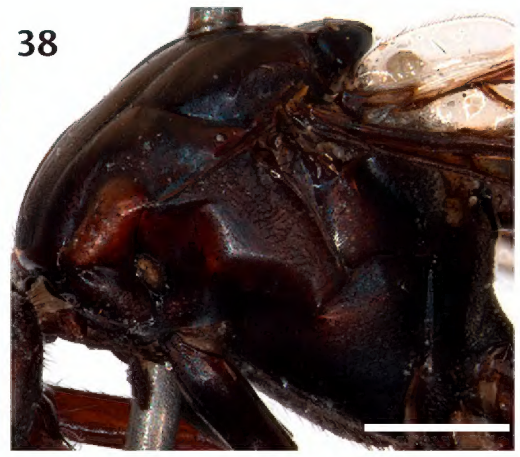
http://zoobank.org/51A33551-0B2D-4EC0-BF5A-A02E8CE02A58
Figs 30–53

Diagnosis and comments. *Megalothoraca rosalyae* sp. nov., known from a female specimen, can be recognized by general dark brown (almost black) color of the thorax (Figs 31, 37), except postpronotal lobe paler, reddish brown (Fig. 38), and abdomen dark blue, distinctly metallic (Fig. 30), ocellar seta absent and postpronotal seta present; two anterodorsal spine-like setae on mid femur (Fig. 40), and sinuosity of vein R_{2+3} smother, asymmetrically twice sinuous (Fig. 48).

Description. Holotype female, CEUA: Measurements (in mm): body length 8.57; wing length 8.80; abdomen length 3.47. **Head** (Figs 32–36). Head width-to-height ratio 1.33. Frons-to-head ratio 0.35. Frons width-to-height ratio 0.90. Ocelli-distance ratio 1.81; anterior ocellus inserted at dorsal fourth of frons (Figs 33, 36). Frons dark brown on dorsal third and with polished appearance, reddish brown on ventral two-thirds and velvety appearance (Figs 32, 22); densely whitish pollinose. Lunule brown (Fig. 32). Face, gena, and postcranium dark brown, almost black (Figs 32, 34, 36). Parafacial reddish brown (Fig. 32). Vertex, in frontal view, concave (Fig. 32). Face sparsely whitish pollinose. Gena and postcranium on ventral two-thirds, especially at contour eye and extending to occipital foramen, densely whitish pollinose (Figs 34, 36). Vertex and postcranium on dorsal third bright. Postcranium sparsely black setulose. Antenna dark brown, except base of flagellomere slightly paler. Clypeus, palpus and prementum dark brown. Orbital and outer vertical area extended to vertex, distinctly tumescent and bright (Figs 32, 33). Orbital and outer vertical setae missing, visible only alveoli, distinctly marked (Figs 33, 35). Ocellar seta absent. **Thorax** (Figs 37, 38). Dark brown, almost black, except postpronotal lobe brown, with anatergite, mediotergite, and postmetacoxal bridge densely whitish pollinose. Scutum 1.33 times longer than wide. Postpronotal seta present (missing, visible only alveolus). **Legs** (Figs 39, 40). Entirely dark brown, with hind tarsomeres slightly paler. Fore and mid coxae without anterior spine-like seta. Fore femur slightly thicker than mid and hind femora. Left fore femur with one preapical antero- and posteroventral spine-like seta, and right fore femur with one preapical anteroventral and two posteroventral, on apical third, spine-like setae; setae similar in size. Mid and hind femora with one and two anteroventral preapical spine-like setae, respectively; similar in thickness with those on fore femur. Hind coxa bare on posterior surface. **Wing** (Fig. 48). Generally hyaline except for the following marks: cell bc brownish; basal band discontinuous in an irregular brown spot in cell r_1 between costal break and base of bifurcation between R_{2+3} and R_{4+5}, and faint brown spot on vein bm-cu; complete narrow brown medial band, from costal to posterior margin of wing, wider in cell r_1, with irregular margins; wider brown apical spot, faint in cell m, with proximal margin irregular. Vein R_{2+3} twice asymmetric and inconspicuously sinuous, proximal curve beginning from medial region, and distal curve shorter and more conspicuous. Spurious vein conspicuous, at same level of vein r-m. Vein M, distally to vein r-m, almost straight and inclined towards R_{4+5}. Vein r-m at distal two-fifths of cell dm. Halter whitish. **Abdomen** (Figs 30, 41–47). Tergites dark blue, with metallic blue reflexes (Fig. 30); sparsely and shortly whitish setulose, not pollinose, except basal third of syntergite 1+2 distinctly whitish pollinose (Fig. 41). Sternites dark brown (brown when dissected), densely setulose (Figs 42–47), sternites 3–5 with basal apodeme (Figs 44–46). Sternite 1 (Fig. 42) relatively well developed, one-third of sternite 2 size, semicircular, densely short setulose, setulae similar in length. Sternite 2 (Fig. 43) divided into two plates, twice longer than wide, densely short setulose, setulae similar in length. Sternite

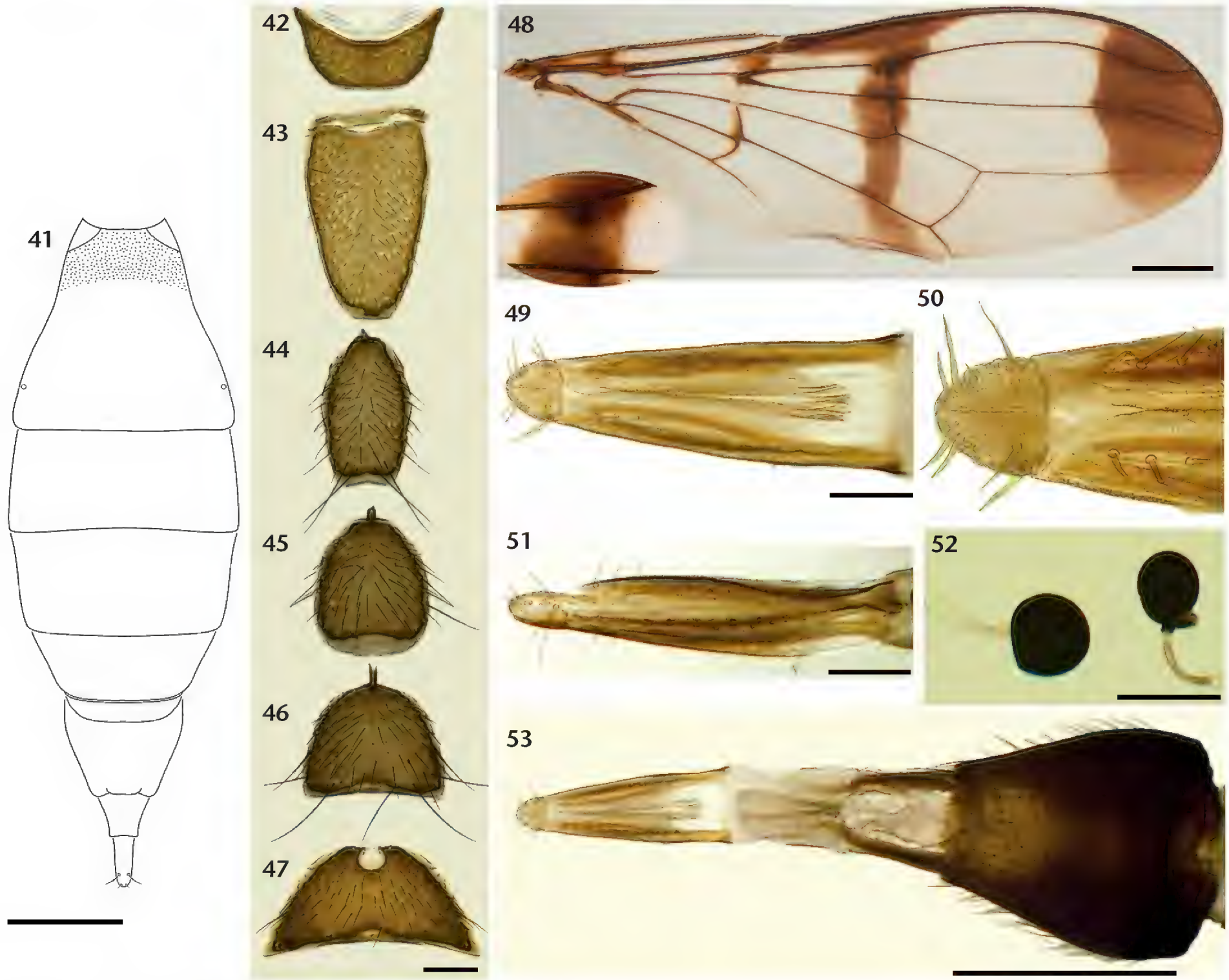






Figures 30–40. *Megalothoraca rosalyae* sp. nov., holotype female, CEUA: (30) habitus dorsal; (31) habitus lateral; (32–36) head: (32) frontal; (33) laterofrontal, dorsal region, in detail; (34) lateral; (35) dorsal, ocellar triangle, in detail; (36) dorsal, general view; (37) thorax, dorsal; (38) thorax, lateral; (39) fore femur, posterior view; (40) mid and hind femur, anterior view. Scale bars: 30, 31 = 2.0 mm, 32, 34, 36–40 = 1.0 mm.

3 (Fig. 44) subrectangular, twice longer than wide, with long and short setulae. Sternites 4 (Fig. 45) and 5 (Fig. 46) spatulate, as long as wide (at largest width) (Fig. 45), and wider than long (Fig. 46), respectively, with long and short setulae. **Female terminalia** (Figs 49–53). Oviscape dark brown, with paler central apical mark (Fig. 53). Taenia brownish, slightly less sclerotized than oviscape; two-fifths oviscape length (Fig. 53). Eversible membrane as long as taenia, with denticles on basal half. Sternite and tergite 8 ciliated, except basally, similar in length (Figs 49, 51). Sternite 8 0.84 mm long. Tip of cerci rounded and base slightly concave centrally, vaguely resembling a heart shape (Figs 49, 50). Setae on cercus (Fig. 50): two long basal setae, one ventral and one more lateral dorsal; ventrally two very short postmedial setae; two long preapical setae, more apical one shorter; and very short and thin setulae distributed on cerci (Fig. 50, visible only alveoli of these setulae). Two spherical and strongly sclerotized spermathecae, one slightly larger than other (Fig. 52).



Figures 41–53. *Megalothoraca rosalyae* sp. nov., holotype female, CEUA: (41) Line drawing of abdomen, dorsal; (42–47) sternites, ventral: (42) sternite 1; (43) sternite 2; (44) sternite 3; (45) sternite 4; (46) sternite 5; (47) sternite 6; (48) wing (spurious vein in detail, left side); (49–51) cerci and segment 8: (49) general view, ventral; (50) in detail, ventral; (51) general view, lateral; (52) spermatechae; (53) oviscape, taenia, eversible membrane, segment 8, and cerci. Scale bars: 41, 48, 53 = 1.0 mm, 42–47, 49, 51, 52 = 0.2 mm.

Male. Unknown.

Type-material. Holotype female, CEUA: "Colombia, Antioquia, Bolivar\Vereda la Mina, Bosques\cercanos a la mina, 1900m.\5.80358°N 76.0691°W, Manual\24.iv.2011. E. Garcias col. CEUA"; "Holotype (♀) CEUA*Megalothoraca rosalyae*\Wendt & Marinoni, 201_" [red label] (CEUA). Specimen pinned, in excellent condition, with no damage (Figs 30, 31); almost setae on head and thorax missing (visible only alveoli); left wing detached and mounted between cover slips; abdomen dissected and stored in plastic microvial with glycerine.

Distribution. Colombia.

Etymology. The epithet honors the Brazilian dipterist Rosaly Ale-Rocha, in recognition of her extensive contributions to the taxonomy of Diptera.

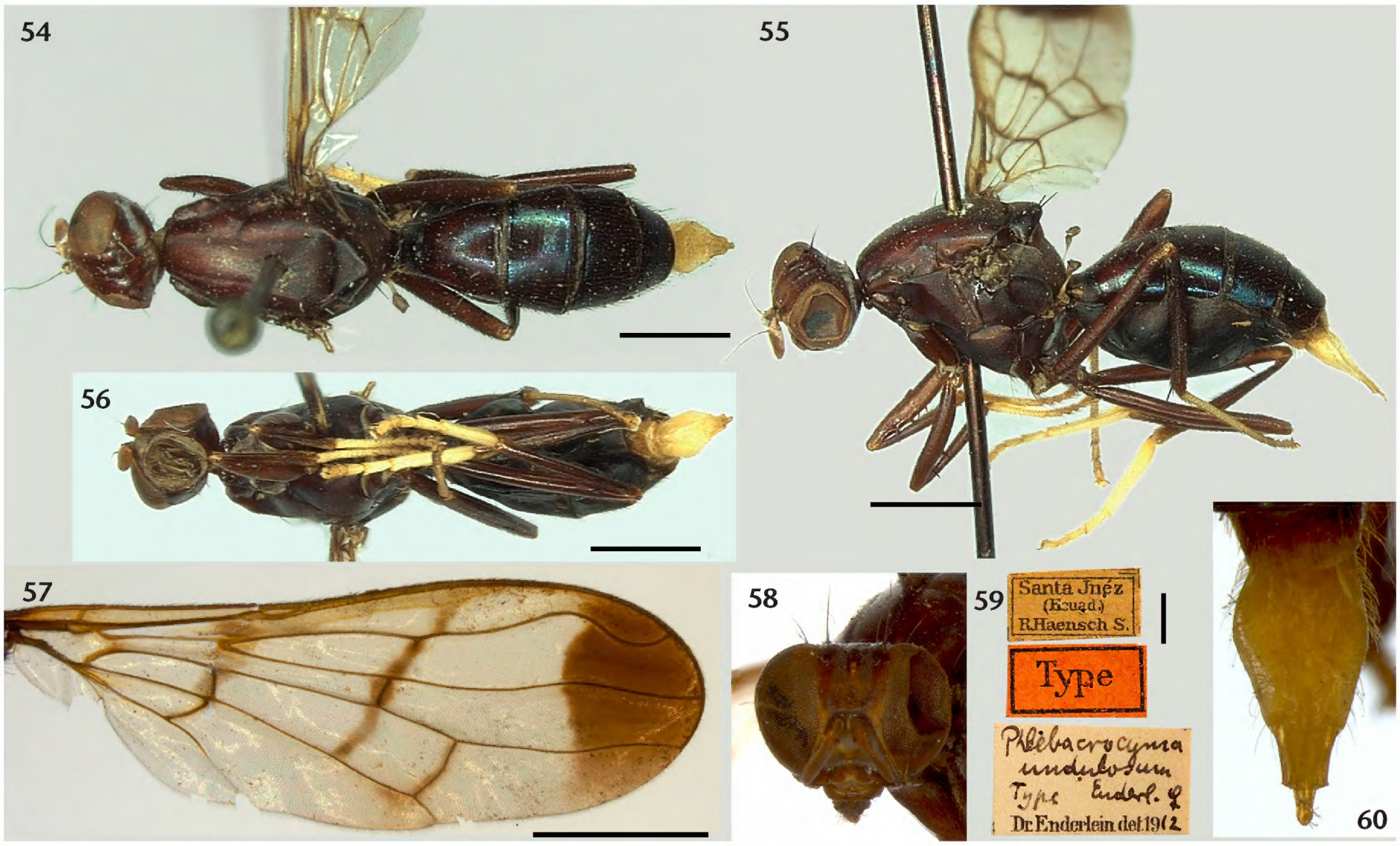
Megalothoraca undulosa (Enderlein, 1912)

Figs 54–60

Phlebacrocyma undulosa Enderlein, 1912: 105 (fig. 6: wing). Type locality: Ecuador, Santa Inéz. Hennig 1938a: 121 (citation); Aczél 1950: 44 (catalogue).

Megalothoraca undulosa Steyskal, 1968: 5 (catalogue, new combination).

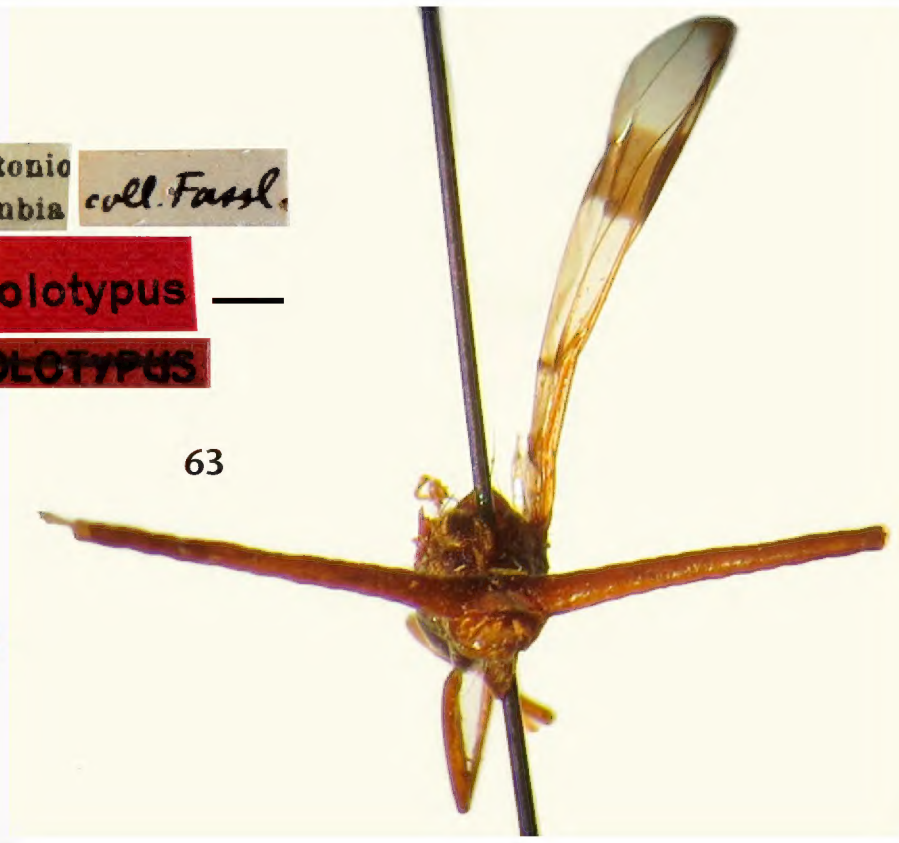
Diagnosis and comments. *Megalothoraca undulosa*, known from a female specimen, can be distinguished from all other species within the genus by having all tarsi yellowish white, sharply contrasted with the rest of leg, dark brown (Figs 55, 56). The other species have the legs unicolor. The female sternite 6 and oviscape are yellow, highlighted from remainder of abdomen dark brown, almost black (Figs 56, 60).



Figures 54–60. *Megalothoraca undulosa*, holotype female, MZPW: (54) habitus dorsal; (55) habitus lateral; (56) habitus ventral; (57) wing; (58) head, frontal; (59) label; (60) oviscape. Photographs 54 to 56 provided by Dominika Mierzwa, MZPW. Scales bar: 54–57 = 2.0 mm, 59 = 5.0 mm.

Redescription. Holotype female, MZPW: Measurements (in mm). Body length 10.0; abdomen length 4.6; wing length 9.5 (9.0 according to Enderlein 1912: 106). **Head** (Figs 54–56, 58). Head width-to-height ratio 1.34. Frons-to-head ratio 0.35. Frons width-to-height ratio 0.95. Ocelli-distance ratio not measured; anterior ocellus inserted at dorsal third of frons (Fig. 58). Entirely dark brown, with ocellar triangle and vertex darker. Vertex, in frontal view, straight (Fig. 58). Frons and face sparsely whitish pollinose. Gena and ventral two-thirds of postcranium, at contour eye and extended to occipital foramen, densely greyish pollinose. Vertex and dorsal third of postcranium with polished appearance. Postcranium sparsely black setulose. Antenna brown. Clypeus, prementum, and palpus dark brown. Orbital and outer vertical area, extended to vertex, slightly tumescent and bright. Ocellar and orbital similar in length and thickness, inserted at same level. **Thorax** (Figs 54, 55). Entirely reddish dark brown, with anatergite, mediotergite, and postmetacoxal bridge densely whitish pollinose. Scutum 1.33 times longer than wide. Postpronotal seta absent. **Legs** (Figs 55, 56). Reddish dark brown, with tarsomeres yellowish white, sharply contrasting with the rest of leg (Fig. 56). Fore and mid coxae without anterior spine. Fore femur slightly thicker than mid and hind femora. Left fore femur with two antero- and posteroventral spine-like setae, and right fore femur with two anteroventral and three posteroventral spine-like setae; different in size; occupying apical half of femur. Mid and hind femora with one preapical anteroventral spine like seta; stouter than those on fore femur. Hind coxa bare on posterior surface. **Wing** (Fig. 57). Generally hyaline except for the following marks: cell bc yellow, and cell c slightly yellowish; faint and diffuse brownish basal band from vein R_1 at level of costal break, from base of bifurcation between R_{2+3} and R_{4+5} to vein bm-cu; oblique brownish yellow area in cell r_1 from costal break to medial band; incomplete and very narrow brown medial band, from costal margin to vein CuA_1, passing on spurious vein and vein r-m, with irregular margins; and wider and conspicuous apical brown spot, faint in cell m, with proximal margin irregular. Vein R_{2+3} from apical third equally twice conspicuous and shortly sinuous. Spurious vein conspicuous, at same level of vein r-m. Vein M, distally to vein r-m, curved or inclined towards R_{4+5}. Vein r-m at distal third of cell dm. Halter brown. **Abdomen** (Figs 54–56). Entirely reddish dark brown, almost black, except contrasting tergite 6 yellow orange. Tergites brownish setulose, not pollinose. Syntergite 1+2 with two pairs of preapical laterodorsal setae. Sternites 1–4 black, sternite 6 yellow orange. **Female terminalia** (Fig. 60). Not dissected. Oviscape yellow, contrasting with remainder of abdomen, dark brown. Tip of cerci rounded.

Male. Unknown.



Figures 61–65. (61–64) *Batrachophthalmum teleopsis*, holotype male, SDEI: (61) habitus lateral; (62) labels; (63) habitus frontal; (64) wing; (65) *Batrachophthalmum quimbaya* (= *B. teleopsis*), paratype male, DZUP, hind leg, anterior view. Scale bars: 61, 63–65 = 1.0 mm, 62 = 0.5 mm.

Type-material examined. Holotype female, MZPW: "Santa Inéz\(Ecuad. [Ecuador])\R. Haensch S."; "Type" [red label]; "Megalothoraca\undulosum\Type Enderl. ♀ [handwritten]\Dr. Enderlein det. 1912" (Fig. 59). The holotype is well preserved, with no damage, except left wing missing (Figs 54–55); oviscape and cerci exposed (Fig. 60).

Distribution. Ecuador.

Batrachophthalmum teleopsis (Hennig, 1938), comb. nov.

Figs 61–64

Megalothoraca teleopsis Hennig, 1938b: 9 (fig. 3: head). Type locality: Colombia, San Antonio. Aczél 1950: 44 (catalogue); Steyskal 1968: 5 (catalogue); Carvalho et al. 2011: 42, 43 (citation, key).

Batrachophthamum quimbaya Carvalho, Wolff & Wendt, 2011: 44 (figs 6–10: male head, habitus, wing, and thorax). Type locality: Colombia, Pereira. Distribution: Colombia. References: Wendt and Ale-Rocha 2014b: 306–310 (female and terminalia descriptions; figs 1A-F, 2A-K; 3A-I: female habitus, head, thorax, terminalia, sternites, spermathecae; male terminalia and sternites); 2016: 587, 592 (catalogue of Colombia, material list). **New synonymy**.

Type-material examined. *Megalothoraca teleopsis* Hennig, holotype male, SDEI: "S. Antonio\Columbia"; "coll. [collector] Fassl" [handwritten]; "Holotypus" [red label]; "~~HOLOTYPUS~~" [red label] (Fig. 62). The holotype is pinned, in poor condition, very damaged: eyes, flagellomeres, left fore and mid legs, right hind leg, and left wing missing; head and abdomen glued to the thorax (Figs 61, 63); apex of abdomen damaged (Fig. 61). *Bratrachophtalmum quimbaya* Carvalho, Wolff & Wendt, holotype male, CEUA: ♂ "COLOMBIA. Risaralda. Pereira./Santuario de Flora y Fauna Otún-/Quimbaya Trampa VSR bosque/Mayo 2001 Grupo de Entomologia/CEUA 12796" (CEUA). The holotype is pinned, and in excellent condition, with no damage. Paratype male, DZUP: ♂ labelled identical to the holotype (DZUP).

Distribution. Colombia.

Synonyms and new combinations

Megalothoraca teleopsis was described by Hennig (1938b) as the first and only species within the genus with stalked eyes, and Carvalho et al. (2011) described an enigmatic stalk-eyed fly

from Colombia – *Batrachophthalmum quimbaya*. Upon comparing the types of both species, we did not find any morphological differences to distinguish them (Figs 1–3 and see Carvalho et al. 2011: figs 6–10). Therefore, *B. quimbaya* is herein considered a junior synonymy of *M. teleopsis*. Additionally, although *M. teleopsis* has features similar to other species of *Megalothoraca* (thorax developed, setae on fore femur distinctly stouter than on mid and hind femora, mid and hind legs longer and more slender than fore leg), those features are also common among species of *Batrachophthalmum* and *Euolena* (in part).

Megalothoraca teleopsis and *Batrachophthalmum rufiventre* Hendel, 1911 type species of the genus, share several characteristics, then here we transfer *M. teleopsis* to *Batrachophthalmum*, based on: as well *B. rufiventre*, *M. teleopsis* has the mid and hind femora with rows of weak spine-like setae on antero- and posterodorsal surfaces, and contrasting with the mid and hind femora of the other species of *Megalothoraca*, which have one (sometimes two) stout spines only on anteroventral surface. Also, *M. teleopsis* has vein R_{2+3} without spurious vein and sinuous just before margin (Fig. 64), as in *B. rufiventre* (see Carvalho et al. 2011: figs 1, 2), and differing from species of *Megalothoraca* which have vein R_{2+3} with two conspicuous preapical curves and a small postmedial spurious vein (e.g. Figs 16, 22, 57).

Batrachophthalmum species are recognized by the following combination of characteristics: head wider than high, especially in males; arista densely pubescent; all femora with spine-like setae on antero- and posteroventral; setae on fore femur distinctly more robust than those on mid and hind femora; hind coxa bare on posterior surface; costal vein of male with no modification, R_{2+3} without spurious vein, with only one tender sinuosity on apical third sinuous just before margin; r-m at distal three-fourths of cell dm.

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